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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,965	05/31/2001	John Lacombe	1662-30400 JMH (P00-2943)	9110
22879	7590	11/03/2004	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			PATEL, NITIN C	
			ART UNIT	PAPER NUMBER
			2116	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,965

Applicant(s)

LACOMBE ET AL.

Examiner

Nitin C. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) •
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This in responsive to amendment filed on September 21, 2004.

Terminal Disclaimer

2. The terminal disclaimer filed on September 21, 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of application number 09/932,541 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 11, 14 – 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hauck et al. [hereinafter as Hauck], US Patent 6,026,454.

5. As to claim 1, Hauck discloses an interface and information transfer method between device driver program and application program for computer system comprising:

- a. an operating system with at least two protection levels [hardware, and software] [col. 5, lines 11 – 22];
- b. a watchdog driver [watchdog driver program][col. 8, lines 7 – 10];
- c. at least one computer application [extended services server program, col. 12, lines 35 – 36]; and

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d. a reset service [watchdog circuit to generate reset, col. 12, lines 47 – 48, fig. 2]; wherein the watchdog driver [watchdog driver program] observes at least one application [extended services server program] for a periodic message [periodic call] from and initiated by the application [extended services server program] and wherein if the periodic message [periodic call] is not received for a predetermined period of time [every 10 sec], the watchdog driver [watchdog driver program] instructs the reset service to initiate a reset procedure [watchdog circuit to generate reset] [col. 5, lines 11 – 22, col. 12, lines 47 – 48, fig. 2] [col. 12, lines 33 – 49].

6. As to claim 7, Hauck discloses an interface and information transfer method between device driver program and application program for computer system comprising:

a. a system thread configured to monitor a plurality [several] of user applications [programs] operating in the user mode of the computer operating system [col. 12, lines 52 – 54];

b. a first input/output control call (IOCTL) [server program call to] signal interface for communicating control signals between the watchdog driver [watchdog driver program] and each of said user applications [programs][col. 12, lines 35 – 37]; and

c. a second IOCTL [watchdog driver program will cause] signal interface for communicating control signals between the watchdog driver and the restart services [col. 12, lines 55 – 64];

d. a communication interface [for information transfer between watchdog driver program and application] for coordinating timer events with the operating system scheduler [software timer] corresponding to each of said applications [particular calling program] and

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indicating when each of said applications is presumed to be unresponsive [col. 12, lines 62 – 64, col. 13, lines 16 – 32];

wherein if the system thread does not receive a message from one of said applications within an allotted period of time, the timer event alerts the watchdog driver that the allotted time has elapsed and the watchdog driver signals the restart service to restart that application [processor reset on extended services server inherently restart the server program][col. 5, lines 11 – 22, col. 12, lines 47 – 48, fig. 2] [col. 12, lines 33 – 49].

7. As to claim 14, Hauck discloses a method of detecting and restarting an unresponsive computer application [program], comprising:

- a. executing the application [program] in a first protective layer [hardware] of a computer operating system;
- b. executing an application watchdog driver [watchdog driver program] in a second [Operating System], more protected [inherently more protected than hardware], protective layer of the computer operating system;
- c. establishing a message passing interface [by executing call] between the application [program] and the watchdog driver [watchdog driver program][col. 12, lines 35 – 38];
- d. periodically [every 10 seconds] transmitting signals from the application [executing call to watchdog program from extended service program] to the message passing interface [executing call to watchdog program from extended service program][col. 12, lines 40 – 42];

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e. executing a system thread in the watchdog driver that is configured to monitor the message passing interface for the periodic signals from said application or other applications

[col. 12, lines 49 – 54]; and

f. executing a reset service [processor reset] that is configured to terminate and restart one or more applications [processor reset on extended services server inherently restart the server program][col. 12, lines 44 – 49];

wherein if the system thread fails to detect the periodic signals from the application for a pre-configured amount of time, the watchdog driver initiates a command to the restart service to terminate and restart the application [col. 12, lines 34 – 64, col. 13, lines 15 – 32].

8. As to claim 21, Hauck discloses an interface and information transfer method between device driver program and application program for computer system comprising:

a. an operating system with at least two protection levels [hardware, and software] [col. 5, lines 11 – 22];

b. a kernel [operating software] mode watchdog driver [watchdog driver program][col. 8, lines 7 – 10];

c. at least one computer application [extended services server program, col. 12, lines 35 – 36]; and

d. a reset service [watchdog circuit to generate reset, col. 12, lines 47 – 48, fig. 2];
wherein the watchdog driver observes at least one application [extended services server program] for a periodic message [periodic call] from and initiated by the application [extended services server program] and wherein if the periodic message [periodic interrupt] is not received for a predetermined period of time [every 10 sec], the watchdog driver [watchdog driver program]

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instructs the reset service watchdog circuit] to initiate [generate] a reset procedure [watchdog circuit to generate reset] [col. 5, lines 11 – 22, col. 12, lines 47 – 48, fig. 2] [col. 12, lines 33 – 49].

9. As to claims 2, Hauck teaches a computer system with a message passing [information transfer] interface to transmit signals between the two protection levels [hardware and software], wherein the watchdog driver [watchdog driver program] executes in one protection level [layer] and the application executes in another protection level [layer] and wherein the periodic message [periodic call] is transmitted from the application [extended services server program] to the watchdog driver [watchdog driver program] through the message passing [message transfer] interface [col. 2, lines 20 – 32, col. 12, lines 35 – 67, ol. 13, lines 16 – 67].

10. As to claims 3, and 15, Hauck teaches the message passing [information transfer] interface is a shared memory queue [server storage][col. 1, lines 21 – 33, col. 2, lines 20 – 32].

11. As to claims 4 – 6, and 22 – 24, Hauck teaches reset service to close and restart the application upon receiving instruction to initiate the restart procedure and establishes time events [col. 5, lines 11 – 22, col. 12, lines 46 – 48, col. 13, lines 16 – 32].

12. As to claim 8, Hauck teaches if system thread does receives a message from one of said applications [programs], the time event corresponding to said application is updated to reflect time plus the allotted period of time [update software timer] [col. 13, lines 16 – 32].

13. As to claim 9, Hauck teaches that the messages from said application are sent periodically [every 10 seconds] by applications [program] and directed specifically to watchdog driver [watchdog driver program] [col. col. 12, lines 39 – 42].

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14. As to claim 10, Hauck teaches the interface to transfer information between the watchdog driver and application [title of prior invention].

15. As to claim 11, Hauck teaches the configuration to execute a welcome message through the parallel port for the user and user response [col. 8, lines 45 – 50], therefore he teaches to generate error logging and multiple application reset too.

16. As to claims 16 – 18, Hauck discloses an interface and information transfer method between device driver program and application program for computer system [col. 5, lines 11 – 22, col. 8, lines 7 – 10, fig. 3] therefore, he teaches different interface arrangement, method and protocols too.

17. As to claims 19, and 20 Hauck teaches setting up timer events with operating system scheduler that alerts watchdog driver [watchdog program] program when pre-configured amount of time has elapsed, and resetting the timer events [col. 10, lines 29 – 32, col. 12, lines 35 – 49, col. 13, lines 25 – 28].

18. Claims 1 – 6, and 21 – 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mizoguchi et al. [hereinafter as Mizoguchi], US Patent 5,978,939.

19. As to claim 1, Mizoguchi discloses a timeout monitoring system and method for computer system [col. 1, lines 4 – 9] comprising:

- a. an operating system with at least two protection levels [user layer, hardware layer, and OS layer, col. 1, lines 19 – 24, col. 13, 15 – 19, col. 8, lines 60 – 63];
- b. a watchdog driver [22, watchdog timer driver][col. 13, lines 15 – 16];
- c. at least one computer application [application program, col. 7, lines 30 – 36]; and

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d. a reset service [stop/restart of subsystem][col. 8, lines 3 – 5] col. 11, lines 34 – 39, col. 13, lines 26 – 30];

wherein the watchdog driver observes at least one application [program] for a periodic message [periodic interrupt] from and initiated by the application [from external device, col. 9, lines 15 – 16, reexecution request, col. 13, line 60] and wherein if the periodic message [periodic interrupt] is not received for a predetermined period of time, the watchdog driver instructs the reset service to initiate a reset procedure [col. 3, lines 1 – 8, col. 13, lines 15 – 64, col. 14, lines 1 – 60, col. 15, lines 33 – 65, col. 16, lines 27 - 40].

20. As to claim 21, Mizoguchi discloses a timeout monitoring system and method for computer system [col. 1, lines 4 – 9] comprising:

a. an operating system with at least two protection levels [user layer, hardware layer, and OS layer, col. 1, lines 19 – 24, col. 13, 15 – 19, col. 8, lines 60 – 63];

b. a kernel [OS] mode watchdog driver [22, watchdog timer driver][col. 13, lines 15 – 16];

c. at least one computer application [application program, col. 7, lines 30 – 36]; and

d. a reset service [stop/restart of subsystem][col. 8, lines 3 – 5] col. 11, lines 34 – 39, col. 13, lines 26 – 30];

wherein the watchdog driver observes at least one application [program] for a periodic message [periodic interrupt] from and initiated by the application [from external device, col. 9, lines 15 – 16, reexecution request, col. 13, line 60] and wherein if the periodic message [periodic interrupt] is not received for a predetermined period of time, the watchdog driver instructs the reset service

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to initiate a reset procedure [col. 3, lines 1 – 8, col. 13, lines 13 – 64, col. 14, lines 1 – 60, col. 15, lines 33 – 65, col. 16, lines 27 – 40].

21. As to claim 2, Mizoguchi teaches a computer system with a message passing interface to transmit signals between the two protection levels [layers], wherein the watchdog driver executes in one protection level [layer] and the application executes in another protection level [layer] and wherein the periodic message is transmitted from the application to the watchdog driver through the message passing interface [col. 13, lines 13 – 67].

22. As to claim 3, Mizoguchi teaches message passing interface is a shared memory queue [process schedule queues and associated discussion on col. 13, beginning line 60].

23. As to claims 4 – 6, and 22 – 24, Mizoguchi teaches reset services to close [stop], restart, alert [warning] [process management subsystem with handling processes for stop/restart and warning discussion, col. 8, lines 1 – 5] and process management with scheduling [col. 9, lines 15 – 64, col. 13, lines 54 – 67, col. 14, lines 1 – 11].

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

25. Claims 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauck et al. [hereinafter as Hauck], US Patent 6,026,454 as applied to claims 1 – 11, and 14 – 24 above, and further in view of Frazier et al. [hereinafter as Frazier], US Patent 6,665,758 B1.

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26. As to claims 12, and 13, Hauck discloses an interface and information transfer method between device driver program and application program for computer system comprising: a system thread configured to monitor a plurality [several] of user applications [programs] operating in the user mode of the computer operating system [col. 12, lines 52 – 54]; a first input/output control call (IOCTL) [server program call to] signal interface for communicating control signals between the watchdog driver [watchdog driver program] and each of said user applications [programs][col. 12, lines 35 – 37]; and a second IOCTL [watchdog driver program will cause] signal interface for communicating control signals between the watchdog driver and the restart services [col. 12, lines 55 – 64]; a communication interface [for information transfer between watchdog driver program and application] for coordinating timer events with the operating system scheduler [software timer] corresponding to each of said applications [particular calling program] and indicating when each of said applications is presumed to be unresponsive [col. 12, lines 62 – 64, col. 13, lines 16 – 32]; wherein if the system thread does not receive a message from one of said applications within an allotted period of time, the timer event alerts the watchdog driver that the allotted time has elapsed and the watchdog driver signals the restart service to restart that application [processor reset on extended services server inherently restart the server program][col. 5, lines 11 – 22, col. 12, lines 47 – 48, fig. 2] [col. 12, lines 33 – 49].

However, Hauck does not teach prioritizing of plurality of application [program] by a computer user and to permit varying levels of watchdog protection. In summary, Hauck does not teach prioritizing of plurality of application [programs] and varying levels of watchdog protection.

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Frazier teaches a software Sanity Monitor for detecting hang condition and remedying software-lock up conditions by automatically restarting, and is designed to run in an operating environment where different run-time priorities for different programs to determine which program to execute by operating system [col. 1, lines 51 – 62, col. 3, lines 64 – 67, col. 4, lines 1 – 4, col. 5, lines 23 – 27, col. 6, lines 14 – 67, col. 8, lines 42 – 48, lines 56 – 67, see whole reference, fig. 2 - 9].

It would have been obvious to one of ordinary skill in art, having the teachings of Hauck and Frazier before him at the time of invention was made, to modify the information transfer between the watchdog driver program and application program disclosed by Hauck to include prioritizing of different programs with different priority [see whole reference fig. 2 – 9] as taught by Frazier in order to obtain Sanity Monitor which uses the operating software's information and execute independent of it thereby eliminating reliance on a "sane" operating system [col. 1, lines 44 – 67, col. 2, lines 56].

27. Prior Art not relied upon:

Please refer to the references listed on which are not relied upon in the claim the attached PT0-892 rejections detailed above.

28. Applicant's arguments with respect to claims 1 - 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin C. Patel whose telephone number is 571-272-3675. The examiner can normally be reached on 7:00am - 5:30pm (M-Th).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nitin C. Patel

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October 26, 2004


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